INDEX TO VOLUME XXV

AUTHORS

PAGE

Alcock, A. W. (See L. R. Johnson).. 266
Anderson, J. Ansel (See H. E. Rasmussen)..... 337
Anellis, Abe (See J. M. Van Lanen). 326

Banasik, Orville J. (See R. H. Harris) 255
Barmore, Mark A. (See Karl F. Finney)..... 291
Beaty, Annabel, and B. W. Fairbanks. Evaluating the nutritive values of several breads by gestation-lactation performance..... 202
Bethke, R. M. (See Lorraine Ditzler). 273
Boyer, Paul D. Book review: Volumetric analysis. II. Titration methods, by I. M. Kolthoff and V. A. Stenger..... 151
Brenner, Sadie, Stuart G. Dunlop, and Virgil O. Wodicka. Effect of fortification of canned bread on stability..... 367

Christensen, Clyde M., and Dorothy R. Gordon. The mold flora of stored wheat and corn and its relation to heating of moist grain..... 40
Cleveland, F. C., and Ralph W. Kerr. The action of beta-amylase on corn amylose..... 133
Corman, Julian, and A. F. Langlykke. Action of mold enzymes in starch saccharification..... 190
—— (See J. M. Van Lanen)..... 326
Cotton, R. T. Book review: Technique de la désinsectisation, by A. L. Lepigre..... 152
Crossland, L. B., and H. H. Favor. Starch gelatinization studies. II. A method for showing the stages in swelling of starch during heating in the amylograph..... 213

Dalby, Gaston. The determination and definition of color in eggs..... 413
—— (See Charles Hoffman)..... 385
De Ritter, E. (See S. H. Rubin).... 52
Ditzler, Lorraine, Charles H. Hunt, and R. M. Bethke. Effect of heredity on the niacin and pantothenic acid content of corn..... 273
Dunlop, Stuart G. (See Sadie Brenner)..... 367

Esselbaugh, Nettie C. Effect of bentonite on loaf volume and weight of hard and soft wheat flour..... 280
Evans, Robert John, and J. L. St. John. Influence of autoclaving dry peas on some properties of the proteins..... 377

Fairbanks, B. W. (See Annabel Beaty)..... 202
Favor, H. H., and N. F. Johnston. Communication to the editor. Additional data on effect of polyoxyethylene stearate on the crumb softness of bread..... 424

PAGE

—— (See L. B. Crossland)..... 213
Febbraro, E. (See S. H. Rubin)..... 52
Finney, Karl F., and Mark A. Barmore. Loaf volume and protein content of hard winter and spring wheats..... 291
France, W. G. (See W. Derby Laws) 231
Freilich, J. Studies on bread staling. III. Influence of fermentation variables on bread staling as measured by compressibility and farinograph procedures..... 87

Gates, Robert L., and Eric Kneen. Preparation of amylase-active concentrates from mold bran..... 1
Gordon, Dorothy R. (See Clyde M. Christensen)..... 40

Hall, Lloyd A. (See Leo Klee)..... 362
Harris, R. H., L. D. Sibbitt, and Orville J. Banasik. Effect of synthetic plant growth stimulants on some properties of cereal proteins and on mixogram patterns..... 255
—— (See L. D. Sibbitt)..... 286
Hellman, N. N., and E. H. Melvin. Water sorption by corn starch as influenced by preparatory procedures and storage time..... 146
Hilbert, G. E. (See John E. Hodge). 19
Hodge, John E., Edna M. Montgomery, and G. E. Hilbert. Hydrolysis of the amylopectins from various starches with beta-amylase. 19
Hoffman, Charles, T. R. Schweitzer, E. K. Spotts, and Gaston Dalby. Evaluation of the baking properties of roller process nonfat dry milk solids by a farinograph procedure.. 385
Hood, Maude Pye, and Belle Lowe. Air, water vapor, and carbon dioxide as leavening gases in cakes made with different types of fats..... 244
Hubbard, J. E. (See M. J. Wolf)... 312
Hunt, Charles H. (See Lorraine Ditzler)..... 273
Hutchins, R. P. Book review: Cottonseed and cottonseed products. Their chemistry and chemical technology, by Alton E. Bailey, ed..... 425

Jahns, F. W. (See S. H. Rubin).... 52
Johnsen, Vernon L., and Allan K. Smith. Hydrolytic treatment of soybean protein with papain..... 77
—— (See Allan K. Smith)..... 399
Johnson, Carolyn (See Roy L. Whistler)..... 418
Johnson, John A., and Byron S. Miller. High levels of alpha-amylase in baking. I. Evaluation of the effect of alpha-amylase from various sources. 168
—— (See Byron S. Miller)..... 178
Johnson, L. R., and A. W. Alcock. A revised method for the determination of bromate in bromated flours. 266
Johnston, N. F. (See H. H. Favor).. 424

Kerr, Ralph W. (See F. C. Cleveland) 133
King, H. H. (See W. G. Schrenk) . . . 61
Klee, Leo, Louis Sair, and Lloyd A. Hall. A simplified determination of the cold water absorptive capacity of pregelatinized flours 362
Kneen, Eric (See Robert L. Gates) . . 1
Kummerow, Fred A. (See Byron S. Miller) 391

Langlykke, A. F. (See Julian Corman) . 190
Larmour, R. K. (See C. C. Walden) . 30, 346
Laws, W. Derby, and W. G. France. A comparative study of some protein fractions of wheat flour 231
LeMense, E. H. (See J. M. Van Lanen) 326
Lowe, Belle (See Maude Pye Hood) . 244

MacMasters, M. M. (See M. J. Wolf) 312
Marnett, L. F., R. W. Selman, and R. J. Sumner. A modified amylograph method for the rapid determination of flour amylase activity . . 127
Melvin, E. H. (See N. N. Hellman) . 146
Miller, Byron S., and John A. Johnson. High levels of alpha-amylase in baking. II. Proteolysis in straight and sponge doughs 178
—— **and Fred A. Kummerow.** The disposition of lipase and lipoxidase in baking and the effect of their reaction products on consumer acceptability 391
—— (See John A. Johnson) 168
Miller, Sidney E. Book review: The chemistry of the carbon compounds. IV. The heterocyclic compounds and organic free radicals, by Victor von Richter 152
Milner, Max. Book review: Scientific principles of grain storage, by T. A. Oxley 364
Montgomery, Edna M. (See John E. Hodge) 19

Oxley, T. A. Study of the water content of single kernels of wheat 111

Rasmussen, H. E., and J. Ansel Anderson. Fermentation cabinet for 100-gram doughs 337
Rist, C. E. (See M. J. Wolf) 312
Rubin, S. H., E. De Ritter, E. Febbraro, and F. W. Jahns. Factors affecting the determination of thiamine and riboflavin in enrichment premixes containing ferrum reductum 52

St. John, J. L. (See Robert John Evans) 377
Sair, Louis (See Leo Klee) 362
Sandstrom, W. M. Book review: On the structure of the protein molecule. A chemical investigation, by N. Trönsegaard. Second ed. 1944 . 288
Schrenk, W. G., and H. H. King. Composition of three varieties of Kansas-grown wheat. Mineral analysis of wheat and soil 61
—— (See J. A. Shellenberger) 407
Schweitzer, T. R. (See Charles Hoffman) 385
Selman, R. W. (See L. F. Marnett) . 127
Shellenberger, J. A., and W. G. Schrenk. Mineral analysis of Peruvian wheat 407
—— (See Frank W. Wichser) 155
Shetlar, M. R. Chemical study of the mature wheat kernel by means of the microscope 99
Sibbitt, L. D., and R. H. Harris. A note on the effect of chlorine-substituted phenoxy compounds on the milling and baking quality of hard red spring wheat 286
—— (See R. H. Harris) 255
Smith, Allan K., and Vernon L. Johnsen. Sunflower seed protein 399
—— (See Vernon L. Johnsen) 77
Smith, F. Book review: Acetylene chemistry, by Ernst David Bergmann 366
——. Book review: Isomerism and isomerisation, by Ernst David Bergmann 366
——. Book review: Synthetic methods of organic chemistry. A thesaurus. Volume I, by W. Theilheimer 366
Spinks, J. W. T., and C. I. Tollefson. Adsorption measurements on flour using radioactive isotopes 139
Spotts, E. K. (See Charles Hoffman) 385
Stern, Rosa. Comparative study of the effects of cysteine hydrochloride and papain on unsalted and salted doughs 220
Sullivan, Betty. Acceptance of the Osborne medal—"The mechanism of the oxidation and reduction of flour" . . . . . No. 6 Suppl.
Sumner, R. J. (See L. F. Marnett) . . 127

Tollefson, C. I. (See J. W. T. Spinks) 139

Van Lanen, J. M., E. H. LeMense, Abe Anellis, and Julian Corman. Influence of proteolytic enzymes and yeast nutrients upon the requirement for malt in grain alcohol fermentations 326

Wagoner, John A. Microscopical observations and procedures used in a study of industrial corn steeping . . . 354
Walden, C. C., and R. K. Larmour. Relationship of diastatic activity to flour strength 346
—— **and** ——. Studies on experimental baking tests. IV. Combined effects of yeast, salt, and sugar on gassing rates 30
Weatherwax, Paul (See Roy L. Whistler) 71
Whistler, Roy L., and Carolyn Johnson. Effect of acid hydrolysis on the retrogradation of amylose 418
—— **and Paul Weatherwax.** Amylose content of Indian corn starches from North, Central, and South American corns 71

Wichser, Frank W., and J. A. Shellenberger. Methods for determining flour particle size distribution..... 155
Wodicka, Virgil O. (See Sadie Brenner) 367
Wolf, M. J., M. M. MacMasters, J. E. Hubbard, and C. E. Rist. Comparison of corn starches at various stages of kernel maturity..... 312

SUBJECTS

Absorption studies in flour, comparison of pasting and swelling-volume methods for determination (Klee, Sair, and Hall)..... 362
Acetone as amylase precipitant (Gates and Kneen)..... 1
Alcohol
Ethyl, see Ethyl alcohol
Grain, see Ethyl alcohol
Industrial, see Industrial alcohol
Alcohols, as amylase precipitants (Gates and Kneen)..... 1
Alpha-amylase, see Amylases, Alpha-
Amylases
Alcohols as precipitant for (Gates and Kneen)..... 1
Alpha-
detrimental effects of presence of proteases on baking processes (Miller and Johnson)..... 178
effect of high levels on baking processes (Miller and Johnson). 178
from various sources, evaluation of high levels in baking processes (Johnson and Miller)..... 168
Beta-
for hydrolysis of corn amylose (Cleveland and Kerr)..... 133
for hydrolysis of starch (Hodge, Montgomery, and Hilbert).... 19
Fungal
relation of
alpha-amylase to alcohol yield (Corman and Langlykke)... 190
"glucogenic activity" to alcohol production (Corman and Langlykke)..... 190
use in alcohol production from corn mash (Corman and Langlykke)..... 190
In flour, determination by amylograph method (Marnett, Selman, and Sumner)..... 127
Mold bran, precipitation by means of alcohols or acetone (Gates and Kneen)..... 1
Precipitation
with acetone (Gates and Kneen). 1
with alcohols (Gates and Kneen). 1
Amylograph
For determining flour amylase activity (Marnett, Selman, and Sumner)..... 127
For showing stages in swelling of starch during heating (Crossland and Favor)..... 213
Amylopectin, see Starch, Amylopectin fraction
Amylose, see Starch, Amylose fraction
Amylose, Corn, see Starch, Corn, amylose fraction.....
Baked products, disposition of lipase and lipoxidase in (Miller and Kummerow)..... 391
Baking
Effect of high alpha-amylase levels (Miller and Johnson).....168, 178
Quality, see Flour, Baking quality Tests
effect of yeast, salt, and sugar on gassing rates (Walden and Larmour)..... 30
fermentation cabinet for 100-gram doughs (Rasmussen and Anderson)..... 337
Barley
Effect of synthetic plant growth substances on protein (Harris, Sibbitt, and Banasik)..... 255
Malt, see Malt
Bentonite, effect on loaf volume and weight of bread (Esselbaugh).... 280
Beta-amylase, see Amylases, Beta-
Book reviews
Acetylene chemistry, by Ernst David Bergmann (Smith)..... 366
The chemistry of the carbon compounds. IV. The heterocyclic compounds and organic free radicals, by Victor von Richter (Miller)..... 152
Cottonseed and cottonseed products. Their chemistry and chemical technology, ed. by Alton E. Bailey (Hutchins)..... 425
Isomerism and isomerisation, by Ernst David Bergmann (Smith). 366
On the structure of the protein molecule. A chemical investigation, by N. Trönsegaard. Second ed. (Sandstrom)..... 288
Scientific principles of grain storage, by T. A. Oxley (Milner)..... 364
Synthetic methods of organic chemistry. A thesaurus. Volume I. 1942–1944, by W. Theilheimer (Smith)..... 366
Technique de la désinsectisation, by A. L. Lepigre (Cotton)..... 152
Volumetric analysis. II. Titration methods, by I. M. Kolthoff and V. A. Stenger (Boyer)..... 151
Bran, Mold, as alpha-amylase source, effect on flour baking qualities (Johnson and Miller)..... 168
Bread
Canned
effect of fortification on stability (Brenner, Dunlop, and Wodicka)..... 367
niacin stability in (Brenner, Dunlop, and Wodicka)..... 367
riboflavin stability in (Brenner, Dunlop, and Wodicka)..... 367

Bread (Continued)
thiamine stability in (Brenner, Dunlop, and Wodicka) 367
Crumb softness, effect of polyoxyethylene stearate (Favor and Johnston) 424
Enriched
canned, storage stability (Brenner, Dunlop, and Wodicka) 367
nonfat milk, nutritive values (Beaty and Fairbanks) 202
water, nutritive value (Beaty and Fairbanks) 202
Milk solids, nonfat, in, evaluation (Hoffman, Schweitzer, Spotts, and Dalby) 385
Nonfat milk, nutritive value (Beaty and Fairbanks) 202
Nutritive values, evaluation by gestation-lactation performance (Beaty and Fairbanks) 202
Staling
effect of
crumb softening agents (Freilich) 87
fermentation variables on bread staling (Freilich) 87
polyoxyethylene stearate on crumb softness (Favor and Johnston) 424
yeast (Freilich) 87
measurement by means of compressibility and farinograph procedures (Freilich) 87
Volume, see Loaf volume
Water, nutritive value (Beaty and Fairbanks) 202
Weight, effect of bentonite (Esselbaugh) 280
Whole wheat
nonfat milk, nutritive value (Beaty and Fairbanks) 202
nutritive value (Beaty and Fairbanks) 202
Bromated flour, see Flour, Bromated

Cakes
Made with
butter, effect of air, water vapor, and carbon dioxide (Hood and Lowe) 244
hydrogenated lard, effect of air, water vapor, and carbon dioxide (Hood and Lowe) 244
oil, effect of air, water vapor, and carbon dioxide (Hood and Lowe) 244
Carboxymethylcellulose dispersion, measurement of starch viscosity in (Crossland and Favor) 213
Cereal and cereal products
Effect of synthetic plant growth stimulants
on quality of spring wheat (Sibbitt and Harris) 286
on proteins (Harris, Sibbitt, and Banasik) 255
Stored, relation of mold flora to heating of moist grain (Christensen and Gordon) 40
Color of eggs, determination and definition (Dalby) 413

Corn
Alcohol, mold enzymes as saccharifier (Corman and Langlykke) 190
Flour, water absorption, determination by pasting method (Klee, Sair, and Hall) 362
Meal, premixes, thiamine and riboflavin content, effect of ferrum reductum in determination (Rubin, De Ritter, Febbraro, and Jahns) 52
Moisture content, relation to mold flora and heating (Christensen and Gordon) 40
Niacin in, effect of heredity (Ditzler, Hunt, and Bethke) 273
Pantothenic acid in, effect of heredity (Ditzler, Hunt, and Bethke) .. 273
Starch, see Starch, Corn
Steeping process, microscopical study (Wagoner) 354
Stored, relation of mold flora to heating of moist grain (Christensen and Gordon) 40
Study of starches at various stages of kernel maturity (Wolf, MacMasters, Hubbard, and Rist) 312
Wet milling, microscopical study (Wagoner) 354
Crumb-softening agents, effect on bread staling (Freilich) 87
—— (Favor and Johnston) 424
Cysteine hydrochloride, effect on dough (Stern) 220

Diastatic activity of flour, relation to flour baking strength (Walden and Larmour) 346
2,4-Dichlorophenoxyacetic acid, sodium salt, effect on milling and baking quality of wheat (Sibbitt and Harris) 286
Dough
Cysteine hydrochloride action on, mechanism of (Stern) 220
Fermentation, see Fermentation
Gassing rate, see Gas production in dough
Papain action on, mechanism of (Stern) 220

Eggs, color determination and definition (Dalby) 413
Enzymes, see also specific enzymes
Proteolytic, effect on requirements in grain alcohol fermentations (Van Lanen, LeMense, Anellis, and Corman) 326
Ethanol, see Ethyl alcohol
Ethyl alcohol
As amylase precipitant (Gates and Kneen) 1
Production
effect of
proteolytic enzymes on malt requirements (Van Lanen, LeMense, Anellis, and Corman) 326
yeast nutrients on malt requirements (Van Lanen, LeMense, Anellis, and Corman) 326
from corn with fungal amylase (Corman and Langlykke) 190

Farinograph
As a measure of bread staling (Freilich) 87
For evaluating baking properties of roller process nonfat dry milk solids (Hoffman, Schweitzer, Spotts, and Dalby) 385
Fats, effect of oil, butter, and hydrogenated lard on cake quality (Hood and Lowe) 244
Fermentation
Action of mold enzymes in starch saccharification (Corman and Langlykke) 190
Cabinet for 100-gram doughs (Rasmussen and Anderson) 337
Effect of yeast on bread staling (Freilich) 87
Gas production in dough
effect of
sugar (Walden and Larmour) .. 30
salt (Walden and Larmour) ... 30
yeast (Walden and Larmour) .. 30
Proteolytic enzymes as malt replacement in grain alcohol production (Van Lanen, LeMense, Anellis, and Corman) 326
Time, effect on bread staling (Freilich) 87
Yeast nutrients as malt replacement in grain alcohol production (Van Lanen, LeMense, Anellis, and Corman) 326
Flour
Adsorption of radioactive isotopes (Spinks and Tollefson) 139
Amylase activity, determination
by flour paste viscosity measurements (Marnett, Selman, and Sumner) 127
by amylograph method (Marnett, Selman, and Sumner) 127
Baking quality
effect of
alpha-amylases (Johnson and Miller) 168
synthetic plant growth stimulants (Sibbitt and Harris) ... 286
testing by means of Ru^{+++} adsorption (Spinks and Tollefson) 139
Baking strength
relation to diastatic activity (Walden and Larmour) 346
Bromated, bromate determination, revised method (Johnson and Alcock) 266
Diastatic activity, relation to flour strength (Walden and Larmour) . 346
Effect of
added alpha-amylase on baking processes (Johnson and Miller) 168
bentonite on loaf volume and bread weight (Esselbaugh) 280
malted barley on baking processes (Johnson and Miller) 168
malted wheat on baking processes (Johnson and Miller) 168
mold bran on baking processes (Johnson and Miller) 168
Enzymes, diastases, relation to flour strength (Walden and Larmour) . 346
Flour (Continued)
Gluten, electrophoresis analysis (Laws and France) 231
Lipase activity (Miller and Kummerow) 391
Lipoxidase activity (Miller and Kummerow) 391
Maltose-producing ability (see Flour, diastatic activity)
Oxidation-reduction mechanism (Sullivan) .....No. 6 Suppl.
Particle size
classification of methods for determining (Wichser and Shellenberger) 155
methods for determination
elutriation (Wichser and Shellenberger) 155
sedimentation (Wichser and Shellenberger) 155
wire sieve (Wichser and Shellenberger) 155
Pregelatinized, water absorption, determination by pasting method (Klee, Sair, and Hall) 362
Premixes
riboflavin content, effect of ferrum reductum in determination (Rubin, De Ritter, Febbraro, and Jahns) 52
thiamine content, effect of ferrum reductum in determination (Rubin, De Ritter, Febbraro, and Jahns) 52
Proteins
effect of synthetic plant growth stimulants (Harris, Sibbitt, and Banasik) 255
—— (Sibbitt and Harris) 286
electrophoresis investigation (Laws and France) 231
of hard winter and spring wheats (Finney and Barmore) 291
Radioactive tracer method for determining quality (Spinks and Tollefson) 139
Strength, see Flour, Baking strength
Water absorption
comparison of pasting and swelling volume methods for determination (Klee, Sair, and Hall) 362
determination by pasting method (Klee, Sair, and Hall) 362
Fungal amylases, see Amylases, Fungal

Gas production in dough
Effect of
salt (Walden and Larmour) 30
sugar (Walden and Larmour) 30
yeast (Walden and Larmour) 30
Relation to
diastatic activity (Walden and Larmour) 346
protein content (Walden and Larmour) 346
Gassing power, see Gas production in dough
Gelatinization of starch, see Starch, Gelatinization
"Glucogenic activity" in fungal amylase preparations (Corman and Langlykke) 190

Gluten
Effect of added cysteine and papain (Stern) 220
In flour, electrophoresis study (Laws and France) 231
Grain, see Cereals and cereal products

Isopropyl alcohol, as amylase precipitant (Gates and Kneen) 1

Lard, hydrogenated, effect on cake quality (Hood and Lowe) 244
Leavening agents
Air, effect on cakes made with oil, butter, and hydrogenated lard (Hood and Lowe) 244
Carbon dioxide, effect on cakes made with oil, butter, and lard (Hood and Lowe) 244
Water vapor, effect on cakes made with oil, butter, and hydrogenated lard (Hood and Lowe) 244
Lipase
Disposition in baked products (Miller and Kummerow) 391
Reaction products, effect on consumer acceptability of baked products (Miller and Kummerow) 391
Lipoxidase
Disposition in baked products (Miller and Kummerow) 391
Reaction products, effect on consumer acceptability of baked products (Miller and Kummerow) 391
Loaf volume
Effect of
bentonite (Esselbaugh) 280
gassing rate (Walden and Larmour) 30
Of hard winter wheat (Finney and Barmore) 291
Of spring wheat (Finney and Barmore) 291
Relation to protein content (Finney and Barmore) 291

Malt
As alpha-amylase source, effect on flour baking qualities (Johnson and Miller) 168
In grain alcohol fermentations
proteolytic enzymes as substitute (Van Lanen, LeMense, Anellis, and Corman) 326
yeast nutrients as substitute (Van Lanen, LeMense, Anellis, and Corman) 326
Methanol, as amylase precipitant (Gates and Kneen) 1
Microscopical study
Of wet milling of corn (Wagoner) ... 354
Of wheat kernel (Shetlar) 99
Milk, dried nonfat, farinograph procedure of evaluating bread baking qualities of (Hoffman, Schweitzer, Spotts, and Dalby) 385
Millet, effect of synthetic plant growth stimulants on protein (Harris, Sibbitt, and Banasik) 255
Milling, corn, microscopical study of wet (Wagoner) 354
Mixogram, effect of synthetic plant growth stimulants (Harris, Sibbitt, and Banasik) 255
Moisture
Absorbed by corn starches (Hellman and Melvin) 146
In wheat, measurement in single kernels (Oxley) 111
Of stored grain, relation of mold flora and storage heating (Christensen and Gordon) 40
Mold bran, see Bran, Mold
Mold bran, amylases, see Amylases, Mold bran

Niacin
In corn, effect of heredity (Ditzler, Hunt, and Bethke) 273
Stability in canned fortified bread (Brenner, Dunlop, and Wodicka) . 367
Nicotinic acid, see Niacin
Nutritive values of breads by gestation-lactation performance (Beaty and Fairbanks) 202

Osborne medal award, to Betty Sullivan ..... No. 6 Suppl.

Pantothenic acid in corn, effect of heredity (Ditzler, Hunt, and Bethke) 273
Papain, Effect on
Dough (Stern) 220
Solubility of soybean protein (Johnsen and Smith) 77
Particle size
Classification of methods for determining (Wichser and Shellenberger) 155
Flour, methods for determining (Wichser and Shellenberger) 155
Peas, dried, effect of autoclaving on proteins (Evans and St. John) ... 377
Plant growth stimulants, synthetic
2,4-Dichlorophenoxyacetic acid, sodium salt effect on milling and baking qualities of wheat (Sibbitt and Harris) 286
2,4-Dichlorophenoxytriethylamine, effect on milling and baking quality of wheat (Sibbitt and Harris) . 286
Effect on milling and baking quality of wheat (Sibbitt and Harris) 286
Naphthyl acetic acid, effect on cereal protein (Harris, Sibbitt, and Banasik) 255
Phenyl acetic acid, effect on cereal proteins (Harris, Sibbitt, and Banasik) 255
Polyoxyethylene stearate, Effect on
Bread staling (Freilich) 87
Crumb softness (Favor and Johnston) 424
Potato starch, see Starch, Potato
Premixes, see Flour, Premixes
Proteases, detrimental activity in alpha-amylase preparations on baking processes (Miller and Johnson) 178
Protein
Hydrolyzates, effect on malt requirements in grain alcohol fermentations (Van Lanen, LeMense, Anellis, and Corman) 326
Soybean, hydrolysis with papain (Johnsen and Smith) 77

Proteins
In dried peas, effect of autoclaving (Evans and St. John) 377
In flour, electrophoresis study (Laws and France) 231
In sunflower seeds (Smith and Johnsen) 399
In wheat
correlation with mineral content (Schrenk and King) 61
hard winter and spring (Finney and Barmore) 291

Radioactive isotopes, adsorption by flour as a test of baking quality (Spinks and Tollefson) 139
Riboflavin
Effect of ferrum reductum on determination in enriched premixes (Rubin, De Ritter, Febbraro, and Jahns) 52
Stability in canned fortified bread (Brenner, Dunlop, and Wodicka). 367
Rye, effect of synthetic plant growth stimulants on protein (Harris, Sibbitt, and Banasik) 255

Saccharification of corn mashes, effect of mold enzymes (Corman and Langlykke) 190
Salt
Effect on gassing rate of flour (Walden and Larmour) 30
Proteolytic inhibitor in amylolytic preparations (Miller and Johnson) 178
Shortening, effect on cake quality (Hood and Lowe) 244
Sodium alginate dispersion, measurement of starch viscosity in (Crossland and Favor) 213
Sodium chloride, see Salt
Soybean
Meal
lipase activity (Miller and Kummerow) 391
lipoxidase activity (Miller and Kummerow) 391
Protein, hydrolysis with papain (Johnsen and Smith) 77
Staling of bread, see Bread, Staling
Starch
Amylose fraction
content of Indian corns (Whistler and Weatherwax) 71
effect of acid hydrolysis on retrogradation (Whistler and Johnson) 418
Amylopectin fraction, hydrolysis with beta-amylase (Hodge, Montgomery, and Hilbert) 19
Corn
amylose fraction, effect of acid hydrolysis on retrogradation (Whistler and Johnson) 418
at various stayes of kernel maturity (Wolf, MacMasters, Hubbard, and Rist) 312
hydrolysis of
amylopectin fraction with beta-amylase (Hodge, Montgomery, and Hilbert) 19
amylose fraction with beta-amylase (Cleveland and Kerr) 133

Starch (Continued)
Indian, amylose content (Whistler and Weatherwax) 71
water sorption as influenced by preparatory procedures and storage time (Hellman and Melvin) 146
Effect of concentration on temperature of swelling (Crossland and Favor) 213
Gelatinization studies, swelling during heating (Crossland and Favor) 213
Hydrolysis of amylopectin fraction by beta-amylase (Hodge, Montgomery, and Hilbert) 19
Potato
amylose fraction, effect of acid hydrolysis on retrogradation (Whistler and Johnson) 418
hydrolysis of amylopectin fraction with beta-amylase (Hodge, Montgomery, and Hilbert) 19
Retrogradation of amylose fraction, effect of acid hydrolysis (Whistler and Johnson) 418
Saccharification with mold enzymes (Corman and Langlykke) 190
Tapioca, hydrolysis of amylopectin fraction with beta-amylase (Hodge, Montgomery, and Hilbert) 19
Viscosity measurements
in carboxymethylcellulose dispersion (Crossland and Favor) 213
in sodium alginate dispersion (Crossland and Favor) 213
Wheat
amylose fraction, effect of acid hydrolysis on retrogradation (Whistler and Johnson) 418
hydrolysis of amylopectin fraction with beta-amylase (Hodge, Montgomery, and Hilbert) 19
Storage of grain, relation of mold flora to heating of moist grain (Christensen and Gordon) 40
Sugar, effect on gassing rate of flour (Walden and Larmour) 30
Sullivan, Betty, Presentation of Osborne medal to ..... No. 6 Suppl.
Sunflower seeds, protein content (Smith and Johnsen) 399

Tapioca starch, see Starch, Tapioca
Thiamine
Effect of ferrum reductum on determination in enriched premixes (Rubin, De Ritter, Febbraro, and Jahns) 52
Stability in canned fortified bread (Brenner, Dunlop, and Wodicka). 367

Urea, effect on malt requirements in grain alcohol fermentations (Van Lanen, LeMense, Anellis, and Corman) 326

Vitamin B_1, see Thiamine
Vitamin B_2, see Riboflavin
Vitamin B_3, see Pantothenic acid
Vitamin B_6, see Niacin

Vitamins, effect on malt requirements in grain alcohol fermentations (Van Lanen, LeMense, Anellis, and Corman) 326

Water, absorption of flour, pasting method for determination (Klee, Sair, and Hall) 362

Wheat
Ash, relation to available soil nutrients (Schrenk and King) 61
Composition
microchemical study (Shetlar) ... 99
of Kansas varieties (Schrenk and King) 61
Effect of synthetic plant growth stimulants on protein (Harris, Sibbitt, and Banasik) 255
Germ
lipase activity (Miller and Kummerow) 391
lipoxidase activity (Miller and Kummerow) 391
Hard winter
loaf volume (Finney and Barmore) 291
protein content (Finney and Barmore) 291
Malted, effect on flour baking qualities (Johnson and Miller) 168
Microscopical investigation of chemical composition of kernel (Shetlar) 99
Mineral content, correlation with available soil nutrients (Schrenk and King) 61
Moisture content
of single kernel (Oxley) 111
relation to mold flora and heating (Christensen and Gordon) 40
Peruvian, mineral analysis (Shellenberger and Schrenk) 407
Photomicrographs of kernel (Shetlar) 99
Protein content
correlation with mineral content (Schrenk and King) 61

Wheat (*Continued*)
electrophoresis study (Laws and France) 231
Spring
hard red, effect of synthetic plant growth stimulants on milling and baking quality (Sibbitt and Harris) 286
loaf volume (Finney and Barmore) 291
protein content (Finney and Barmore) 291
Starch, see Starch, Wheat
Stored, relation of mold flora to heating of moist grain (Christensen and Gordon) 40
Varieties
effect of available soil nutrients on composition (Schrenk and King) 61
loaf volume of hard winter and spring wheats (Finney and Barmore) 291
protein content
of hard winter and spring wheats (Finney and Barmore) 291
electrophoresis study (Laws and France) 231
Water content, see Wheat, moisture content

Yeast
Effect on
bread staling (Freilich) 87
gassing rate of flour (Walden and Larmour) 30
Lipase activity (Miller and Kummerow) 391
Lipoxidase activity (Miller and Kummerow) 391
Nutrients, effect on malt requirements in grain alcohol fermentations (Van Lanen, LeMense, Anellis, and Corman) 326

CEREAL CHEMISTRY

Published by the American Association of Cereal Chemists

Editor in Chief - - - W. F. GEDDES
Assistant Editor - - - KATHLEEN WEBB
Managing Editor - - - R. A. BOTTOMLEY

Editorial Board:

J. A. ANDERSON
J. S. ANDREWS
M. J. BLISH
G. GARNATZ
J. A. SHELLENBERGER
BETTY SULLIVAN

VOLUME XXV—Nos. 1–6
JANUARY–NOVEMBER, 1948

Lancaster, Pennsylvania
1948

R v.25 1948

LANCASTER PRESS, INC., LANCASTER, PA.

Tech

CONTENTS

NUMBER 1, JANUARY, 1948

Preparation of Amylase-Active Concentrates from Mold Bran. *Robert L. Gates and Eric Kneen* 1

Hydrolysis of the Amylopectins from Various Starches with Beta-Amylase. *John E. Hodge, Edna M. Montgomery, and G. E. Hilbert* 19

Studies on Experimental Baking Tests. IV. Combined Effects of Yeast, Salt, and Sugar on Gassing Rates. *C. C. Walden and R. K. Larmour* 30

The Mold Flora of Stored Wheat and Corn and Its Relation to Heating of Moist Grain. *Clyde M. Christensen and Dorothy R. Gordon* 40

Factors Affecting the Determination of Thiamine and Riboflavin in Enrichment Premixes Containing Ferrum Reductum. *S. H. Rubin, E. De Ritter, E. Febbraro, and F. W. Jahns* 52

Composition of Three Varieties of Kansas-Grown Wheat. Mineral Analysis of Wheat and Soil. *W. G. Schrenk and H. H. King* 61

Amylose Content of Indian Corn Starches from North, Central, and South American Corns. *Roy L. Whistler and Paul Weatherwax* 71

NUMBER 2, MARCH, 1948

Hydrolytic Treatment of Soybean Protein with Papain. *Vernon L. Johnsen and Allan K. Smith* 77

Studies on Bread Staling. III. Influence of Fermentation Variables on Bread Staling as Measured by Compressibility and Farinograph Procedures. *J. Freilich* 87

Chemical Study of the Mature Wheat Kernel by Means of the Microscope. *M. R. Shetlar* 99

Study of the Water Content of Single Kernels of Wheat. *T. A. Oxley* 111

A Modified Amylograph Method for the Rapid Determination of Flour Amylase Activity. *L. F. Marnett, R. W. Selman, and R. J. Sumner* 127

The Action of Beta-Amylase on Corn Amylose. *F. C. Cleveland and Ralph W. Kerr* 133

Adsorption Measurements on Flour Using Radioactive Isotopes. *J. W. T. Spinks and C. I. Tollefson* 139
Water Sorption by Corn Starch as Influenced by Preparatory Procedures and Storage Time. *N. N. Hellman and E. H. Melvin* 146
Book Reviews 151

NUMBER 3, MAY, 1948

Methods for Determining Flour Particle Size Distribution. *Frank W. Wichser and J. A. Shellenberger* 155
High Levels of Alpha-Amylase in Baking. I. Evaluation of the Effect of Alpha-Amylase from Various Sources. *John A. Johnson and Byron S. Miller* 168
High Levels of Alpha-Amylase in Baking. II. Proteolysis in Straight and Sponge Doughs. *Byron S. Miller and John A. Johnson* 178
Action of Mold Enzymes in Starch Saccharification. *Julian Corman and A. F. Langlykke* 190
Evaluating the Nutritive Values of Several Breads by Gestation-Lactation Performance. *Annabel Beaty and B. W. Fairbanks*. 202
Starch Gelatinization Studies. II. A Method for Showing the Stages in Swelling of Starch During Heating in the Amylograph. *L. B. Crossland and H. H. Favor* 213
Comparative Study of the Effects of Cysteine Hydrochloride and Papain on Unsalted and Salted Doughs. *Rosa Stern* 220

NUMBER 4, JULY, 1948

A Comparative Study of Some Protein Fractions of Wheat Flour. *W. Derby Laws and W. G. France* 231
Air, Water Vapor, and Carbon Dioxide as Leavening Gases in Cakes Made with Different Types of Fats. *Maude Pye Hood and Belle Lowe* 244
Effect of Synthetic Plant Growth Stimulants on Some Properties of Cereal Proteins and on Mixogram Patterns. *R. H. Harris, L. D. Sibbitt, and Orville J. Banasik* 255
A Revised Method for the Determination of Bromate in Bromated Flours. *L. R. Johnson and A. W. Alcock* 266
Effect of Heredity on the Niacin and Pantothenic Acid Content of Corn. *Lorraine Ditzler, Charles H. Hunt, and R. M. Bethke* ... 273
Effect of Bentonite on Loaf Volume and Weight of Hard and Soft Wheat Flour. *Nettie C. Esselbaugh* 280

A Note on the Effect of Chlorine-Substituted Phenoxy Compounds on the Milling and Baking Quality of Hard Red Spring Wheat. *L. D. Sibbitt and R. H. Harris* 286
Book Review 288

NUMBER 5, SEPTEMBER, 1948

Loaf Volume and Protein Content of Hard Winter and Spring Wheats. *Karl F. Finney and Mark A. Barmore* 291
Comparison of Corn Starches at Various Stages of Kernel Maturity. *M. J. Wolf, M. M. MacMasters, J. E. Hubbard, and C. E. Rist* 312
Influence of Proteolytic Enzymes and Yeast Nutrients Upon the Requirement for Malt in Grain Alcohol Fermentations. *J. M. Van Lanen, E. H. LeMense, Abe Anellis, and Julian Corman* .. 326
Fermentation Cabinet for 100-Gram Doughs. *H. E. Rasmussen and J. Ansel Anderson* 337
Relationship of Diastatic Activity to Flour Strength. *C. C. Walden and R. K. Larmour* 346
Microscopical Observations and Procedures Used in a Study of Industrial Corn Steeping. *John A. Wagoner* 354
A Simplified Determination of the Cold Water Absorptive Capacity of Pregelatinized Flours. *Leo Klee, Louis Sair, and Lloyd A. Hall* 362
Book Reviews 364

NUMBER 6, NOVEMBER, 1948

Effect of Fortification of Canned Bread on Stability. *Sadie Brenner, Stuart G. Dunlop, and Virgil O. Wodicka* 367
Influence of Autoclaving Dry Peas on Some Properties of the Proteins. *Robert John Evans and J. L. St. John* 377
Evaluation of the Baking Properties of Roller Process Nonfat Dry Milk Solids by a Farinograph Procedure. *Charles Hoffman, T. R. Schweitzer, E. K. Spotts, and Gaston Dalby* 385
The Disposition of Lipase and Lipoxidase in Baking and the Effect of Their Reaction Products on Consumer Acceptability. *Byron S. Miller and Fred A. Kummerow* 391
Sunflower Seed Protein. *Allan K. Smith and Vernon L. Johnsen* . 399
Mineral Analysis of Peruvian Wheat. *J. A. Shellenberger and W. G. Schrenk* 407
The Determination and Definition of Color in Eggs. *Gaston Dalby* 413

Effect of Acid Hydrolysis on the Retrogradation of Amylose. *Roy L. Whistler and Carolyn Johnson* 418
Communication to the Editor. Additional Data on Effect of Polyoxyethylene Stearate on the Crumb Softness of Bread. *H. H. Favor and N. F. Johnston* 424
Book Review 425
Author Index 429
Subject Index 431

Vol. 25

418

424
425
429
431